

REMARKS

Favorable reconsideration and allowance of the claims of the present application are respectfully requested.

Before addressing the specific grounds of rejection raised in the present Office Action, applicants have amended Claim 1 to positively recite that both the metal inductor wires and the metal bond pad are located on *an upper surface of a dielectric material*. Support for this amendment to Claim 1 is found throughout the specification of the instant application. See, for example, paragraph [0031], FIG. 2 and paragraph [0045].

Since the above amendment to Claim 1 does not introduce new matter into the specification of the instant application, entry thereof is respectfully requested.

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,874,770 to Saia et al. ("Saia et al."). Claim 4 stands rejected under 35 U.S.C. § 103 as allegedly unpatentable over the combined disclosures of Saia et al. and U.S. Patent No. 6,027,999 to Wong ("Wong"). Claims 5 and 9 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable over the combined disclosures of Saia et al. and U.S. Patent Application Publication No. 2003/0076209 to Tsai et al. ("Tsai et al."). Claim 6 stands rejected under 35 U.S.C. § 103 as allegedly unpatentable over the combined disclosures of Saia et al. and U.S. Patent No. 6,903,644 to Wang et al. ("Wang et al.").

Concerning the § 102(b) rejection, it is axiomatic that anticipation under § 102 requires that the prior art reference disclose each and every element of the claim to which it is applied. In re King, 801 F.2d, 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1996). Thus, there must be no differences between the subject matter of the claim and the disclosure of the prior art reference. Stated another way, the reference must contain within its four corners adequate direction to

practice the invention as claimed. The corollary of the rule is equally applicable: Absence from the applied reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Applicants respectfully submit that the claims of the present application are not anticipated by the disclosure of Saia et al. since the applied reference does not disclose applicants' claimed structure recited in amended Claim 1. Specifically, Saia et al. does not disclose an RF structure that includes a dielectric material having metal inductor wires of a first thickness and a metal bond pad having a major area of a second thickness *both of the metal inductor wires and the metal bond pad are located on an upper surface of said dielectric material*, wherein said first thickness is greater than said second thickness and said dielectric material represents a final interconnect level of an interconnect structure.

Saia et al. provides a flexible interconnect structure, such as shown in FIG. 12, including a dielectric 42 which includes an inductor 33 and chip pads 46. In contrast to the present claimed structure in which the metal inductor wires and the metal bond pad are *both located on an upper surface of a dielectric material* representing the final interconnect level, the inductor 33 and the chip pads 46 are embedded on opposing surfaces of the dielectric 42. Applicants find no teaching in Saia et al. of the claimed structure in which the metal inductor wires and the metal bond pad *are both located on an upper surface of a dielectric material*.

The foregoing remarks clearly demonstrate that the applied reference does not teach each and every aspect of the claimed invention, as required by King and Kloster Speedsteel; therefore the claims of the present application are not anticipated by the disclosures of Saia et al.

Applicants respectfully submit that the instant § 102 rejection has been obviated and withdrawal thereof is respectfully requested.

Applicants respectfully submit that the claims of the present application are not rendered obvious by the combined disclosures of (i) Saia et al. and Wong (ii) Saia et al. and Tsai et al., and (iii) Saia et al. and Wang et al. Specifically, none of the prior art disclosures, taken in combination with each other, teach or suggest that an RF structure which includes a dielectric material having metal inductor wires of a first thickness and a metal bond pad having a major area of a second thickness *both of the metal inductor wires and the metal bond pad are located on an upper surface of said dielectric material*, wherein said first thickness is greater than said second thickness and said dielectric material represents a final interconnect level of an interconnect structure.

The principal reference, i.e., Saia et al., spurring each of the obviousness rejections, is defective for the reasons mentioned above in regard to the anticipation rejection. Hence, applicants incorporate thus remarks herein by reference. To reiterate: Saia et al. provides a structure in which the inductor 33 and the bond pads 46 are embedded on opposing surfaces of dielectric 42. This is in contrast to the claimed structure in which the bond pads and the inductors are both located on an upper surface of a dielectric material that represents the final interconnect level of the structure.

Wong does not alleviate the above defects in Saia et al. Specifically, Wong provides a LCD IC device that includes pixels 42 and a bond pad 30. The bond pad 30 is formed in one of the interlevel dielectrics (e.g., dielectric 36), and the pixels 42 are formed atop dielectric 36. Although Wong illustrates that the pixels have a thickness that is less than the bond pads, both the bond pads and the pixels are not located on the uppermost dielectric of an interconnect structure.

In view of the above, the obviousness rejection citing the combination of Saia et al. and Wong has been obviated. Reconsideration and withdrawal of the instant § 103 rejection is thus respectfully requested.

With respect to the combination of Saia et al. and Tsai et al., applicants submit that Saia et al. is deficient for the same reasons mentioned above. Tsai et al. does not alleviate the defects in Saia et al. since the applied secondary reference also does not teach or suggest the claimed structure including a dielectric material having metal inductor wires of a first thickness and a metal bond pad having a major area of a second thickness *both the inductor and the bond pads are located on an upper surface of a dielectric layer*, wherein said first thickness is greater than said second thickness and *said dielectric material represents a final interconnect level of an interconnect structure*.

Tsai et al. provides a new method and structure to connect a planar, spiral inductor to an underlying interconnect metal, the patterned interconnect metal having been created over a semiconductor surface. A layer of dielectric followed by a layer of passivation is deposited over the semiconductor surface, including the surface of the underlying interconnect metal. Large first vias are created through the layers of passivation and dielectric. The large first vias align with the patterned interconnect metal, providing low-resistivity points of interconnect between the spiral inductor, which is created on the surface of the layer of passivation concurrent with the creation of the large first vias, and the patterned interconnect metal. A thick layer of polyimide is deposited over the surface of the layer of passivation, including the surface of the spiral inductor and the large first vias. Applicants observe that the prior art structure disclosed in Tsai, et al. does not teach or suggest any of the claimed features.

In view of the above, the obviousness rejection citing the combination of Saia et al. and Tsai et al. has been obviated. Reconsideration and withdrawal of the instant § 103 rejection is thus respectfully requested.

With respect to the combination of Saia et al. and Wang et al., applicants submit that Saia et al. is deficient for the same reasons mentioned above. Wang et al. does not alleviate the defects in Saia et al. since the applied secondary reference also does not teach or suggest the claimed structure including a dielectric material having metal inductor wires of a first thickness and a metal bond pad having a major area of a second thickness *both the inductor and the bond pad are located on an upper surface thereof*, wherein said first thickness is greater than said second thickness and *said dielectric material represents a final interconnect level of an interconnect structure*.

Wang et al. provides a structure including a first coil conductor located 310 over a substrate 120 and having a first conductivity and a first pattern; and a second coil conductor 510 located on a substantial portion of said first coil conductor 310, having a second conductivity substantially greater than said first conductivity, and having a second pattern substantially conforming to said first pattern. Applicants observe that the prior art structure disclosed in Wang, et al. does not teach or suggest any of the claimed features.

In view of the above, the obviousness rejection citing the combination of Saia et al. and Wang et al. has been obviated. Reconsideration and withdrawal of the instant § 103 rejection is thus respectfully requested.

The various § 103 rejections also fail because there is no motivation in the applied references which suggest modifying the disclosed structures to include the various elements recited in the claims of the present invention. Thus, there is no motivation provided in the

applied references, or otherwise of record, to make the modification mentioned above. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Vaeck, 947 F.2d, 488, 493, 20 USPQ 2d. 1438, 1442 (Fed.Cir. 1991).

The rejections under 35 U.S.C. § 103 have been obviated; therefore reconsideration and withdrawal thereof is respectfully requested.

Thus, in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



Yongzhi Yang, Esq.
Registration No. 56,310

Scully, Scott, Murphy & Presser, P.C.
400 Garden City Plaza – Suite 300
Garden City, New York 11530
(516) 742-4343
Customer No. 23389
LSS/YY:vh